



Global Research on COVID-19

新冠病毒数据资源与全球研究项目

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<http://chinadatalab.net>

每日省市新冠病毒病毒案例分布COVID-19 Cases

Daily Updates of Confirmed COVID-19 Cases by Province



制作单位: 中国科学院地理资源所资源与环境信息系统国家重点实验室
资料来源: 国家卫健委和各省卫健委通报, 含港澳台

Daily Updates of Confirmed COVID-19 Cases by City

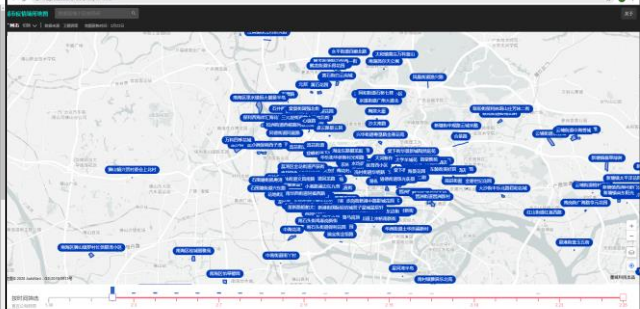
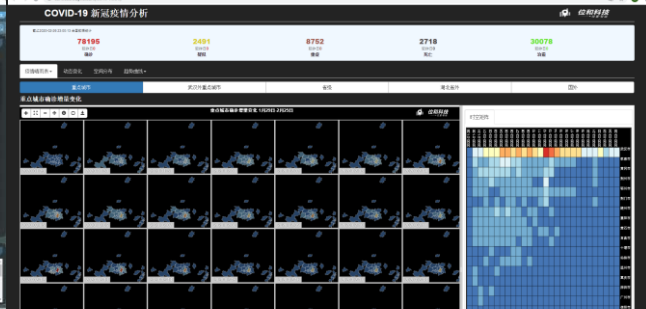
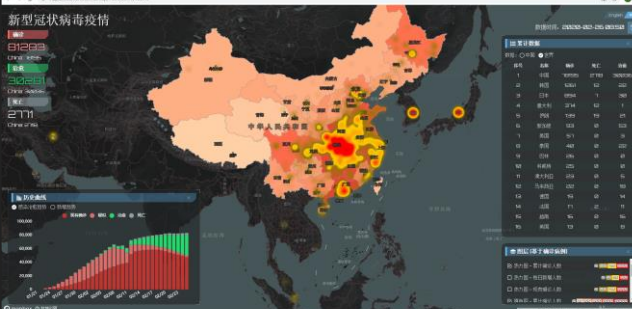
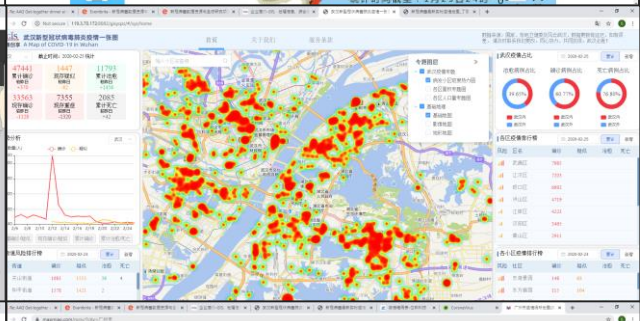
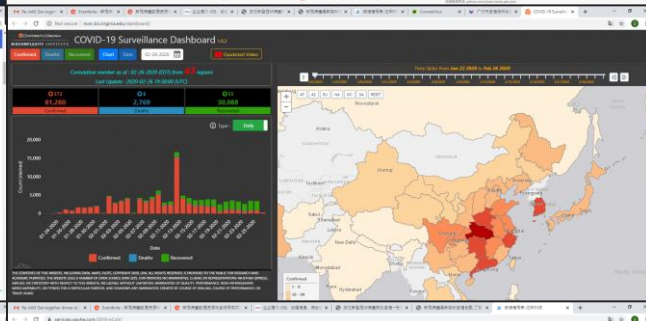


制作单位: 中国科学院地理资源所资源与环境信息系统国家重点实验室
资料来源: 国家卫健委和各省卫健委通报, 含港澳台

Source: The project team for mapping story, the Institute of Geographical Science and Resources of the Chinese Academy of Sciences
中国科学院地理科学与资源研究所资源与环境信息系统国家重点实验室图说工作组

https://mp.weixin.qq.com/s/OTo_HTCXttoH8CQrnXfFIQ

各家疫情网站地图发布



17年前的SARS详细数据，何时公开？

Where can we find the data for SARS of 17 years ago?

Source: <https://zhuanlan.zhihu.com/p/107292732>



pixabay.com

撰文 | 夏志坚

责编 | 陈晓雪



截至2月15日24时，中国大陆的新冠肺炎累计确诊病例达到68500例，疑似病例8228例，累计死亡病例达到1665人。

这场始于2019年年底的疫情，令不少人回想起在2003年春季爆发的SARS疫情。两者的发展似乎存在不小的相似性：病原体都是由动物传染到人的冠状病毒，都在上一年的年末发现无法确诊的肺炎病例，都遭遇过春运的人流高峰（2003年的除夕是1月31

在国家卫健委的官方网站，以“SARS”为关键词搜索，718条结果（截至2月16日下午）亦缺乏中国大陆地区疫情各阶段的详细数据 [3]。其中有一条链接名为“SARS防治专题”，但打开链接，里面没有任何与SARS有关的有效信息，所有子链接都是空白

疫情数据研究共享存在的几个主要问题

- (1) 数据序列断裂化：数据标准不断变化，缺少系统说明；
- (2) 公开数据短期化：缺少历史积累；
- (3) 数据存储零散化：不利永久保存；
- (4) 数据来源差异化：不利数据比较；
- (5) 数据内容离散化：不利发挥综合价值；

此外数据与方法分离，数据与工具分离，数据产权、数据私密性、敏感性，以及大数据与研究成果如何共享也是此类数据研究共享面临的一些核心问题。

宗旨和目标 Goal and Objectives

Goal: to provide an information infrastructure for the global study of novel coronavirus (COVID-19)

Objectives:

- ❑ To establish a **permanent collection** for the COVID-19 study at local, regional and global levels with information collected and integrated from different sources
- ❑ To facilitate the quantitative research on spatial spread and impacts of COVID-19 study with advanced **methodology and technology**
- ❑ To promote collaborative research in the COVID-19 study with the **cloud platform**
- ❑ To promote the use and sharing of data sources in **teaching and research** with DataVerse/WorldMap/CDL
- ❑ To build the **capacity** for future collaborative projects

参与团队 Teams



CGA

The Center for Geographical Analysis (CGA) at Harvard University. Its core mission is to support research and teaching in all disciplines across Harvard University with emerging **geospatial technologies**.



CDI

The China Data Institute, a Michigan based not-for-profit organization. It aims to promote the use and sharing of **China data**; support quantitative research on China in **social science, digital humanity** and other research subjects.



GCSS

The GeoComputation Center for Social Science at Wuhan University. It promotes the scientific research on the theory and method of spatial data in scientific **research**, personnel **training**, international **cooperation** and social **practice**.

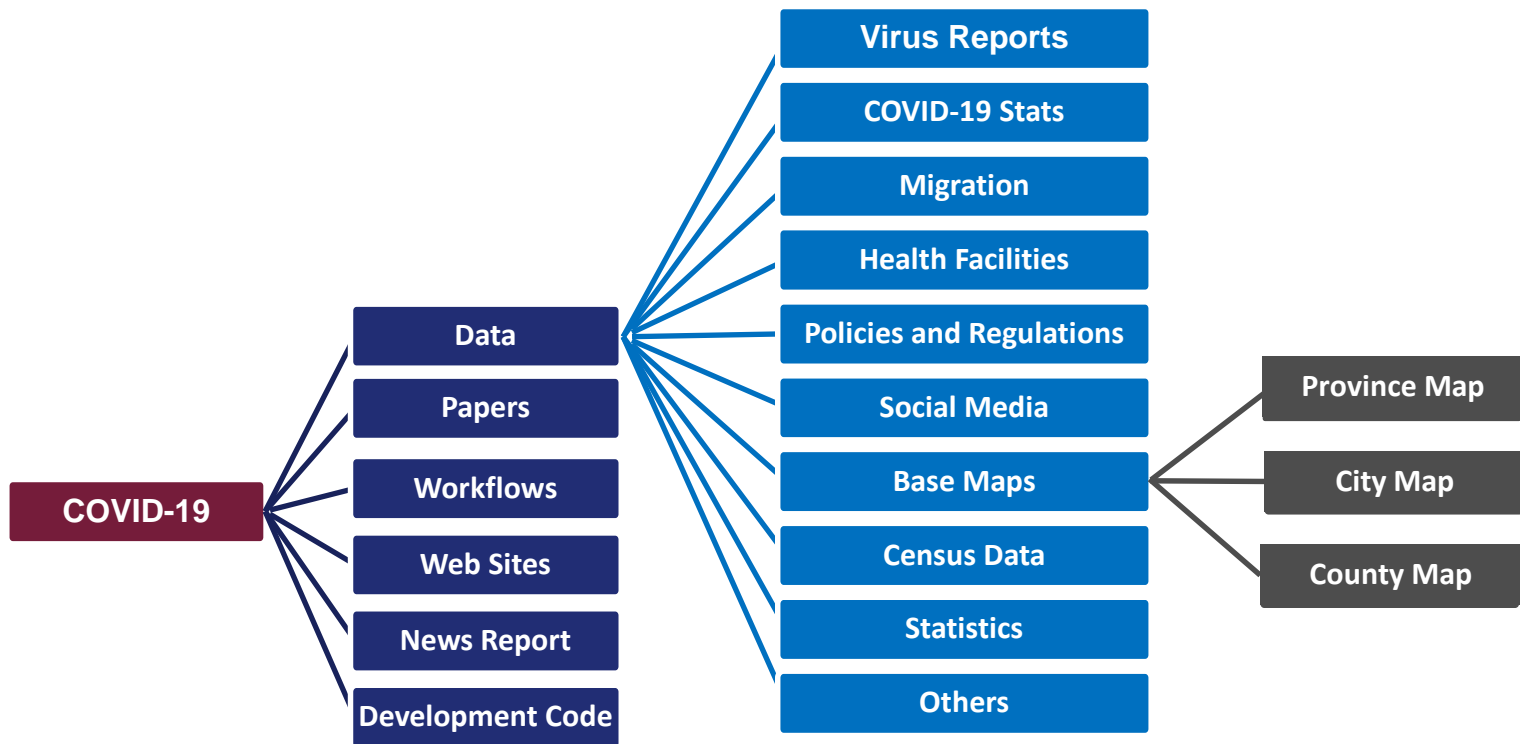


The RMDS Lab is designed to serve a global community of companies and data scientists, empowering them to reap the benefits of **big data**, **artificial intelligence**, and **machine learning**.

主要任务Tasks

- ❑ **数据收集 Data collection (WHU)**
 - Reported data of virus cases at country, province, and city levels
 - Migration
 - Social media
 - New polices and regulations on virus control by China and other countries
 - Links to other web sites on related projects
 - Related publications
- ❑ **数据集成 Data integration (WHU and CDI)**
 - Maps
 - Gov't statistics and Census data
- ❑ **数据分析 Data report (RMDS, WHU, CDI and CGA)**
 - Data analysis
 - PPTs
 - Workflows
- ❑ **数据发布 Data distribution (CGA)**
 - DataVerse for data management at Harvard (<http://covid-19.chinadatalab.net>)
 - Workflow on Spatial Data Lab at Harvard (<http://harvard.chinadatalab.org>)
 - Project description and events on <http://chinadatalab.net>
- ❑ **数据培训与交流 Workshops and seminars (CDI, RMDS, WHU and CGA)**
 - China Data Webinar co-hosted by RMDS and China Data Institute
 - Harvard workshop on March 27, 2020, hosted by Harvard Fairbank Center for Chinese Studies

数据结构 Data Structure of Resources for COVID-19



数据来源 Data Sources

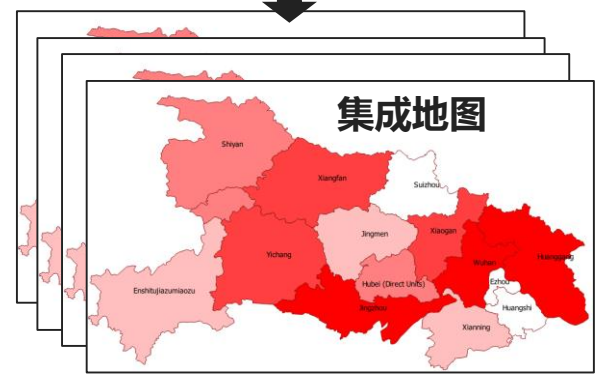
基础地图00-10



疫情数据

ID	GP	Prov	CH	Prov	CH	City	CH	City	CH	Head	2/2020	Dead	2/4/2020	Head	4/2020	Dead	3/4/2020
173	132	42	湖北省	Hubei	4201	武汉市	Wuhan	鄂	311	810	0	142					
174	133	42	湖北省	Hubei	4202	黄石市	Huangshi	鄂	3	106	0	2					
175	134	42	湖北省	Hubei	4203	十堰市	Shiyan	鄂	3	106	0	2					
176	135	42	湖北省	Hubei	4204	宜昌市	Yichang	鄂	1	106	0	2					
177	136	42	湖北省	Hubei	4205	襄阳市	Xiangfan	鄂	1	106	0	2					
178	137	42	湖北省	Hubei	4207	鄂州市	Ezhou	鄂	3	106	0	2					
179	138	42	湖北省	Hubei	4208	荆门市	Jingmen	鄂	3	102	0	2					
180	139	42	湖北省	Hubei	4209	孝感市	Xiaogan	鄂	3	102	0	2					
鄂州	200	42	湖北省	Hubei	4210	鄂州市	Ezhou	鄂	3	102	0	2					
182	181	42	湖北省	Hubei	4211	黄冈市	Huanggang	鄂	14	106	0	25					
183	182	42	湖北省	Hubei	4212	咸宁市	Xianning	鄂	0	106	0	0					
184	183	42	湖北省	Hubei	4213	随州市	Suizhou	鄂	4	106	0	0					
185	184	42	湖北省	Hubei	4214	恩施土家族苗族自治州	Enshi	鄂	0	106	0	0					
186	185	42	湖北省	Hubei	4200	省直辖行政单位	Hubei (Direct Units)	鄂	0	106	0	0					
187	186	43	湖南省	Hunan	4301	长沙市	Changsha	湘	3	106	0	0					
188	187	43	湖南省	Hunan	4302	株洲市	Zhuzhou	湘	1	106	0	0					
189	188	43	湖南省	Hunan	4303	湘潭市	Xiangtan	湘	1	106	0	0					
190	189	43	湖南省	Hunan	4304	衡阳市	Hengyang	湘	3	106	0	0					
191	190	43	湖南省	Hunan	4305	邵阳市	Shaoyang	湘	2	106	0	0					
192	191	43	湖南省	Hunan	4306	岳阳市	Yueyang	湘	2	106	0	0					
193	192	43	湖南省	Hunan	4307	常德市	Changde	湘	2	106	0	0					
194	193	43	湖南省	Hunan	4308	张家界市	Zhangjiajie	湘	1	106	0	0					
195	194	43	湖南省	Hunan	4309	郴州市	Chengde	湘	1	106	0	0					
196	195	43	湖南省	Hunan	4310	湘西自治州	Xiangxi	湘	0	106	0	0					

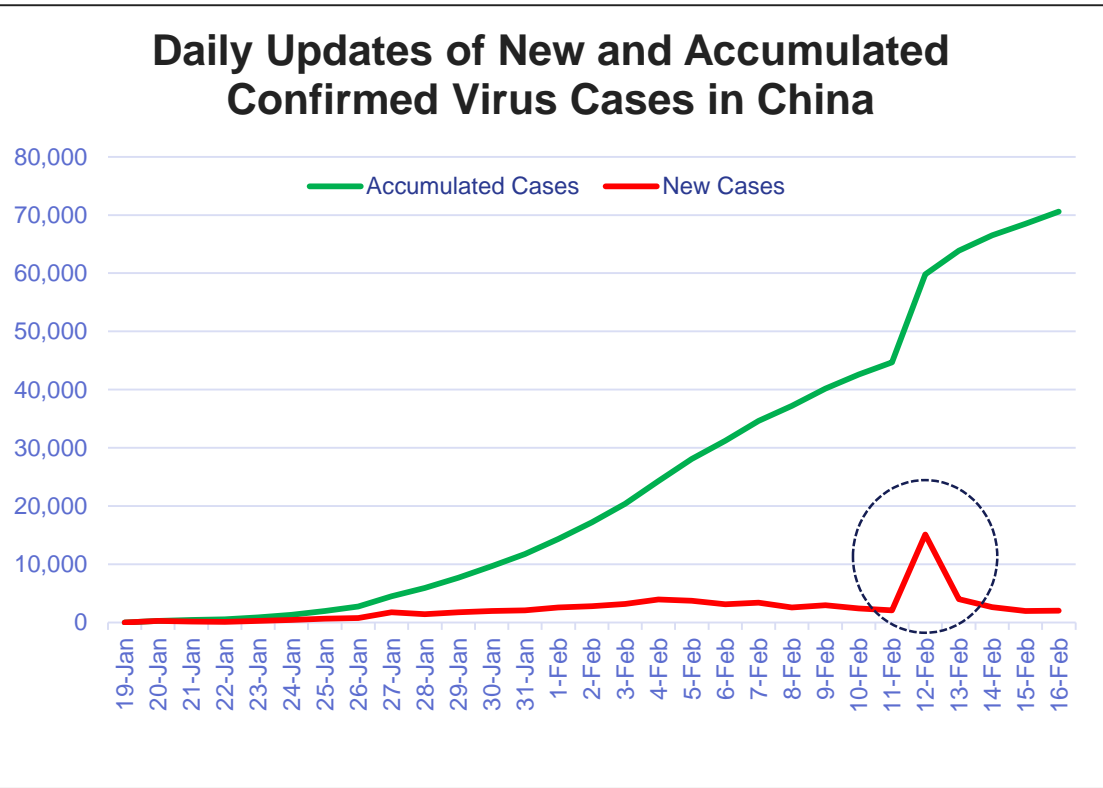
- ❑ **Base data 基础数据**
 - Base maps (province, prefecture and county)
 - Census data (population census and economic census)
 - Statistics (province, prefecture and county)
 - Others
- ❑ **Virus data 病毒案例**
 - ❑ Virus reports from gov't (country, province and city)
- ❑ **Migration data 迁徙人口**
 - ❑ Daily floating population data (Baidu)
 - ❑ Migration data from census (NBS)
- ❑ **Health facility data 健康设施**
 - ❑ POI data (AutoNavi)
 - ❑ Economic Census (NBS)
- ❑ **Social media data 社交媒体**
 - ❑ Weibo
 - ❑ Twitter
- ❑ **Papers 论文**
- ❑ **Reports 报告**
- ❑ **Policies and regulations 政策与法规**



集成地图

每日确诊案例数据 Daily Confirmed Virus Cases

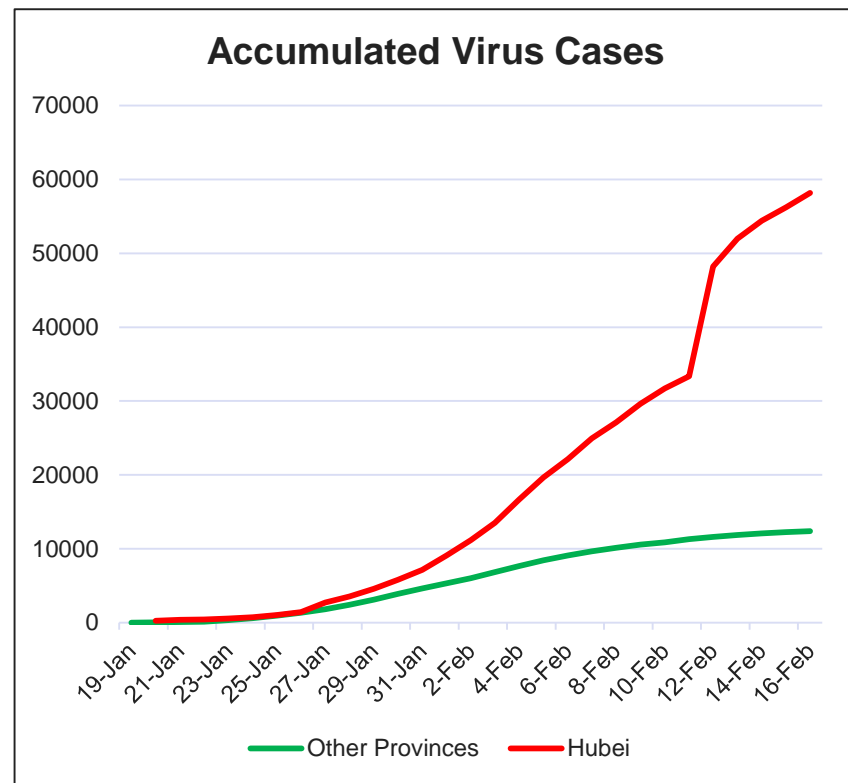
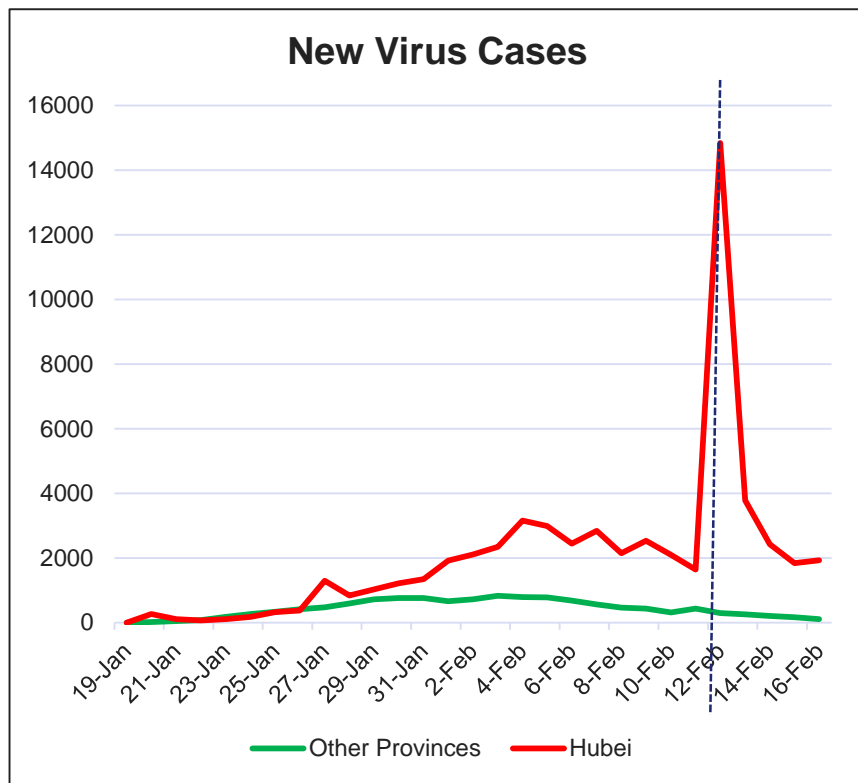
	E	F	G	AB	AC	AD	AE	AF
1	GbCity	City_CH	City_EN	Confirm_1	Confirm_2	Confirm_2	Confirm_2	Confirm_2
174	4201	武汉市	Wuhan	3215	4109	5142	6384	8351
175	4202	黄石市	Huangshi	209	252	334	405	509
176	4203	十堰市	Shiyan	177	212	256	291	318
177	4205	宜昌市	Yichang	276	353	392	452	496
178	4206	襄樊市	Xiangfan	347	441	548	632	735
179	4207	鄂州市	Ezhou	227	278	306	332	382
180	4208	荆门市	Jingmen	251	329	345	400	422
181	4209	孝感市	Xiaogan	628	749	918	1120	1462
182	4210	荆州市	Jingzhou	287	333	499	613	713
183	4211	黄冈市	Huanggang	726	1002	1246	1422	1645
184	4212	咸宁市	Xianning	206	246	296	348	384
185	4213	随州市	Suizhou	304	384	458	641	706
186	4228	恩施土家	Enshitujiazum	87	105	111	123	138
187	4290	省直辖行	Hubei (Direct					
188	4301	长沙市	Changsha	86	112	125	148	164
189	4302	株洲市	Zhuzhou	22	25	26	34	38
190	4303	湘潭市	Xiangtan	13	16	19	21	23
191	4304	衡阳市	Hengyang	26	30	32	35	39
192	4305	邵阳市	Shaoyang	41	49	51	55	68
193	4306	岳阳市	Yueyang	45	53	70	83	89
194	4307	常德市	Changde	39	42	45	50	56
195	4308	张家界市	Zhangjiajie					



Data source: Ding Xiang Yuan, Real-time virus report (<https://ncov.dxy.cn/ncovh5/view/pneumonia>)

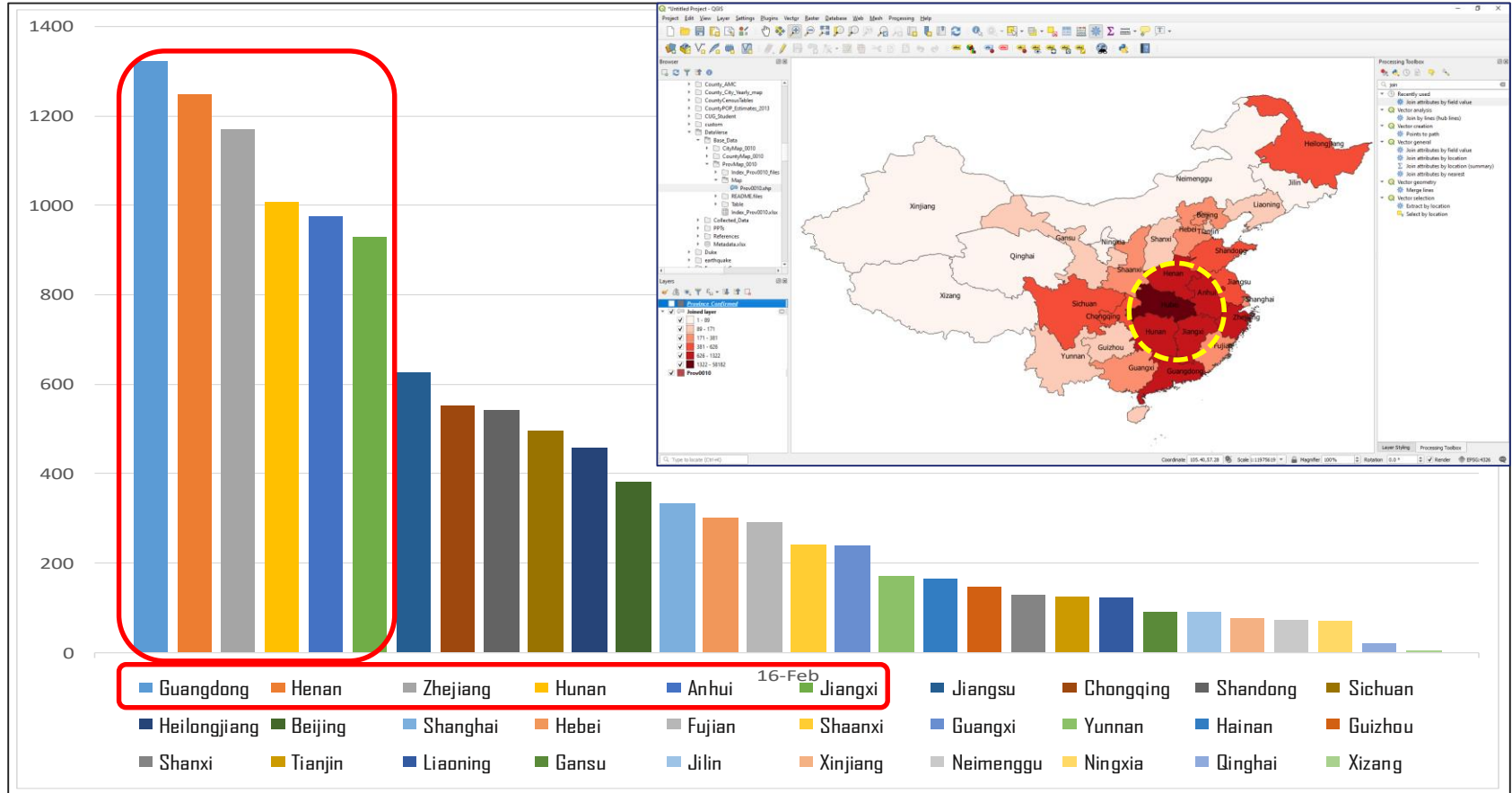
如何理解疫情数据：湖北与其他省

Read the Virus Data: Hubei & Other Provinces



Data source: Ding Xiang Yuan, Real-time virus report (<https://ncov.dxy.cn/ncovh5/view/pneumonia>)

省级确认病例As of Feb 16, 2020



武汉市每日流动人口地图As of Jan 23, 2020

Data Source: <https://qianxi.baidu.com>

外地流向武汉



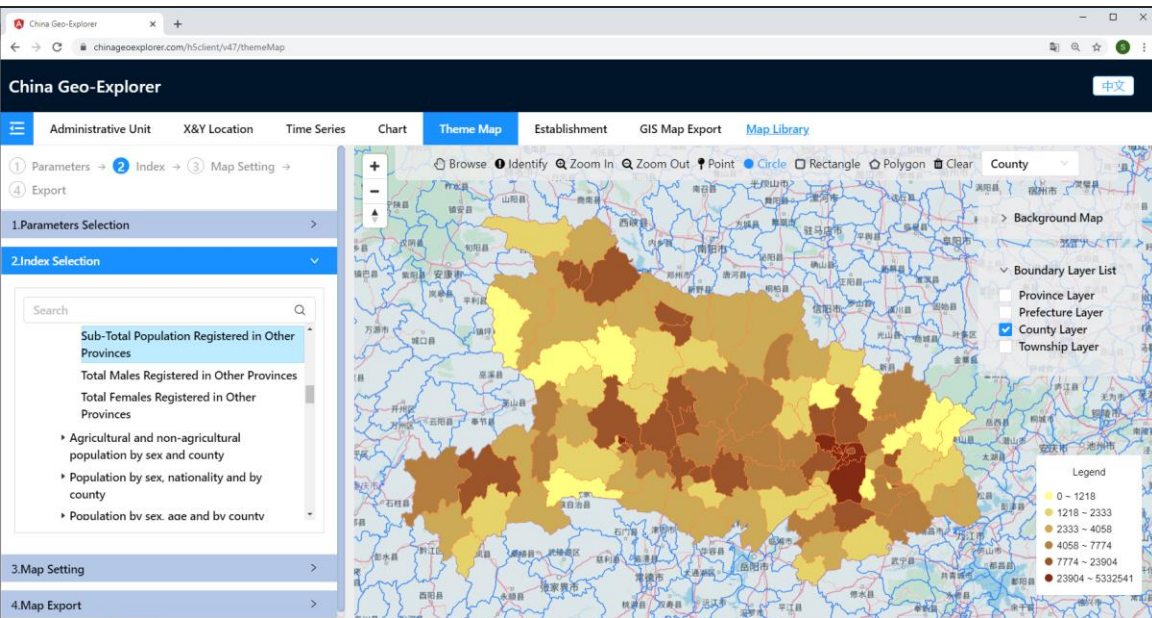
武汉流向外地



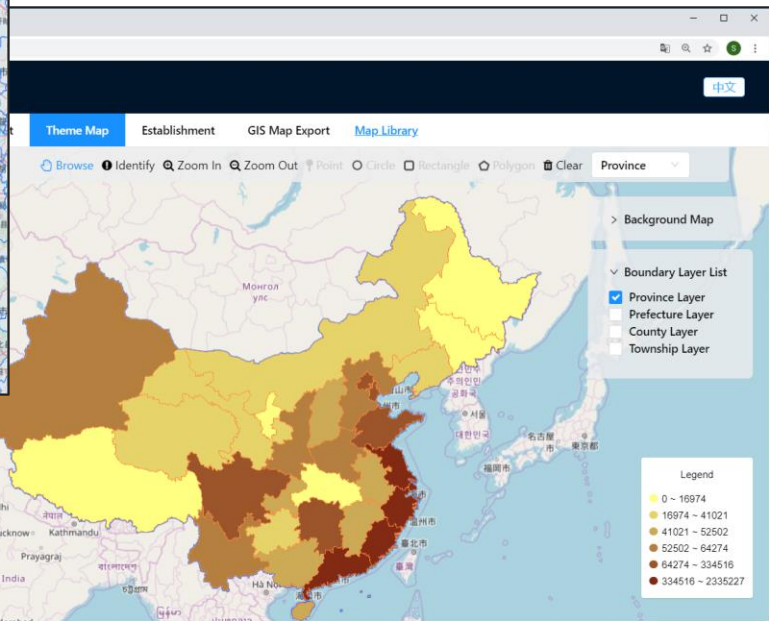
基于2010年人口普查的迁移人口 (> 6 月 & < 5 年)

Data Source: <https://china-data-online.com>

湖北各县区来自其他省份的迁移人口



从湖北流向其他省份的迁移人口



Total Female from Hubei by Household Registration Places

Population from Hunan by Household Registration Places

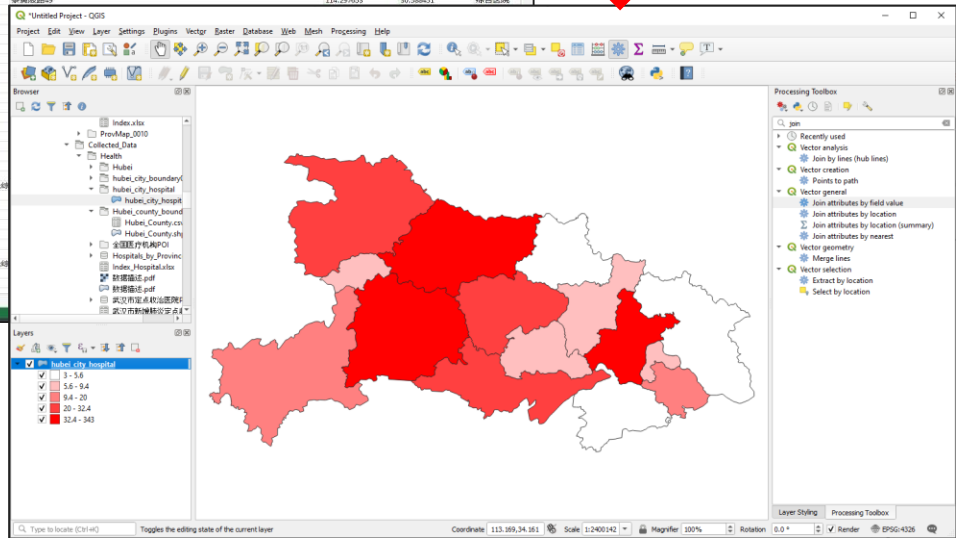
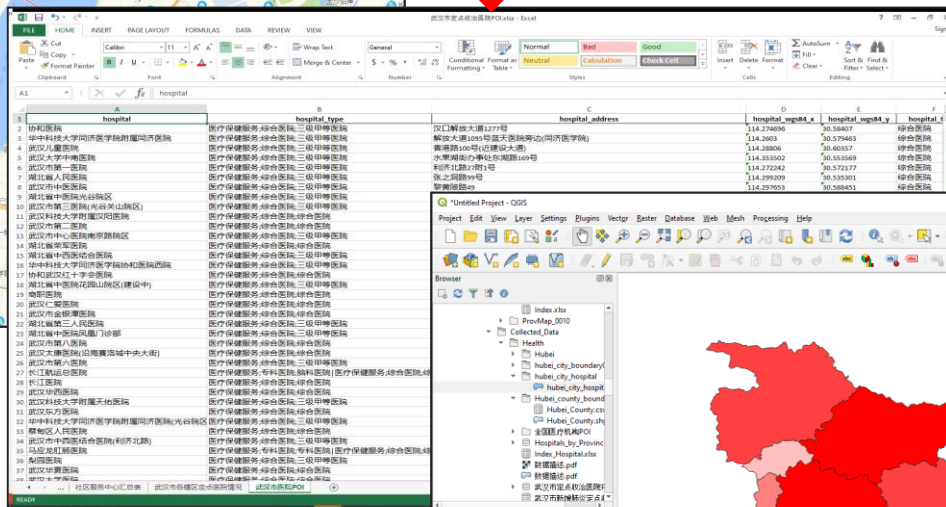
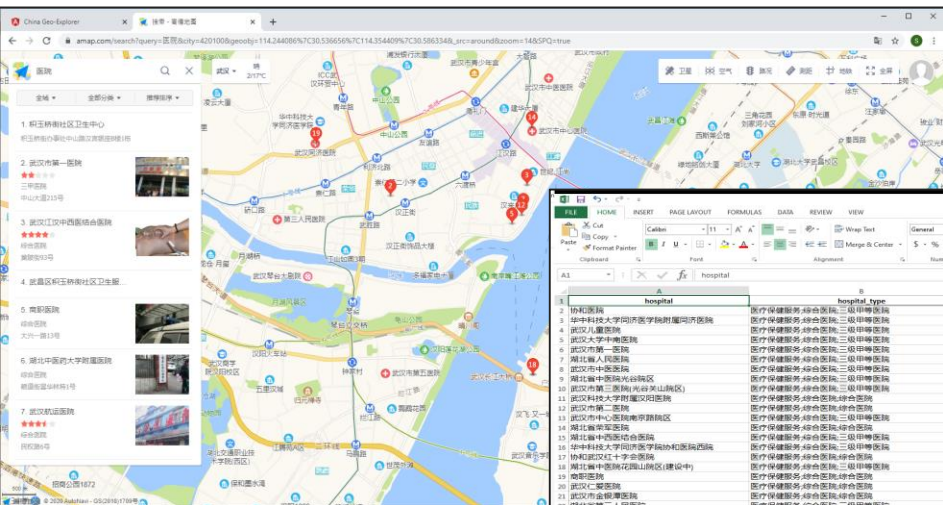
Total Male from Hunan by Household Registration Places

3.Map Setting >

4.Map Export >

来自高德地图的武汉医院分布数据

Data Source: <https://lbs.amap.com>



医院数据爬虫与地图集成

Data Source: <https://lbs.amap.com>

获取高德POI数据HTTP接口，
确定POI所属类型及所属位置的行政区划范围

解析JSON格式数据并存储标签为pois中的POI数据，
参数包括医院名称，所属POI类型，语义地址，
WGS84坐标系下的坐标，所属行政区划单元

建立国家卫生机构分类标准与高德地图POI分类标准映射关系

对医院类型进行匹配，以省级行政区划为单位存储
为Excel格式文件

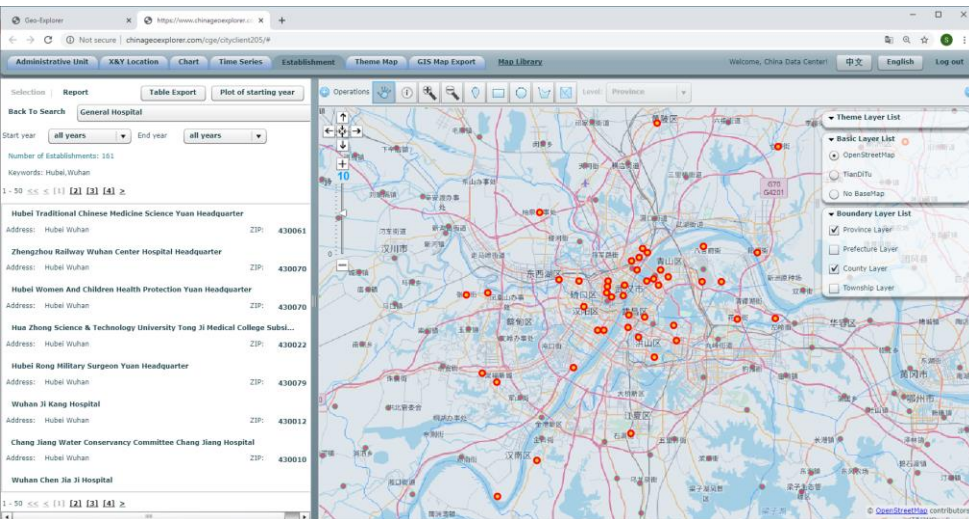
根据省、市、县区行政区划地图进行匹配和合并

Name_CH	Name_EN
医院总数	Total Hospital Number
三级甲等医院	Tertiary Hospital
专科医院	Specialist Hospital
传染病医院	Infectious Disease Hospital
医疗保健服务场所	Healthcare Services
卫生院	Health Center
口腔医院	Dental Hospital
妇科医院	Women's Hospital
急救中心	Emergency Center
整形美容	Plastic Surgery
疾病预防	Prevent Disease Center
眼科医院	Eye Hospital
精神病医院	Psychiatric Hospital
综合医院	general Hospital
耳鼻喉医院	ENT Hospital
肿瘤医院	Cancer Hospital
胸科医院	Chest Hospital
脑科医院	Brain Hospital
诊所	Clinic
骨科医院	Orthopaedic Hospital

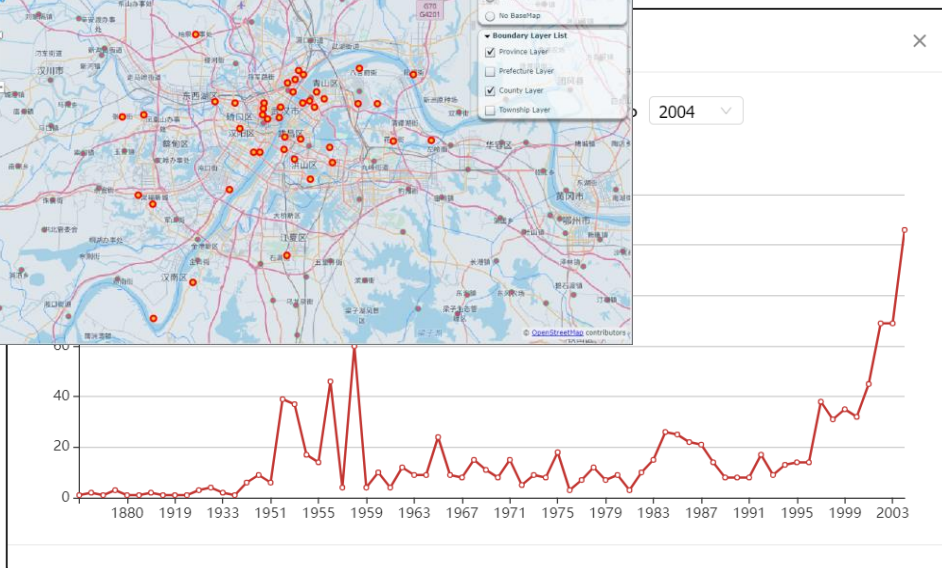
来自经济普查的医院数据(2004 & 2008)

Data Source: <https://china-data-online.com>

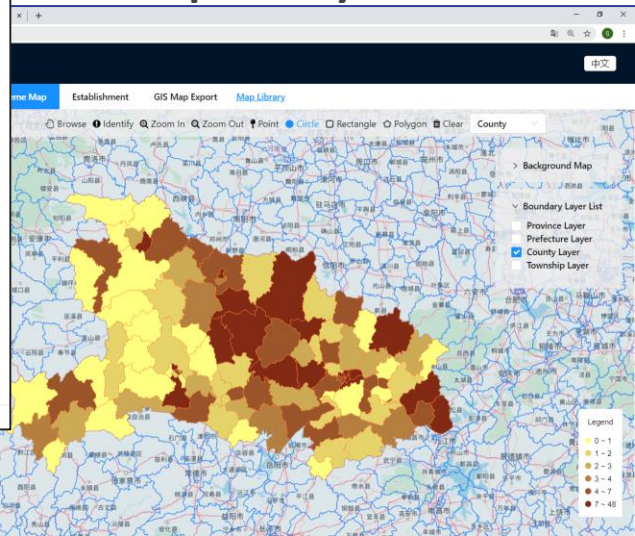
Locations of general hospitals in Wuhan



New hospitals by year



Hospitals by Counties

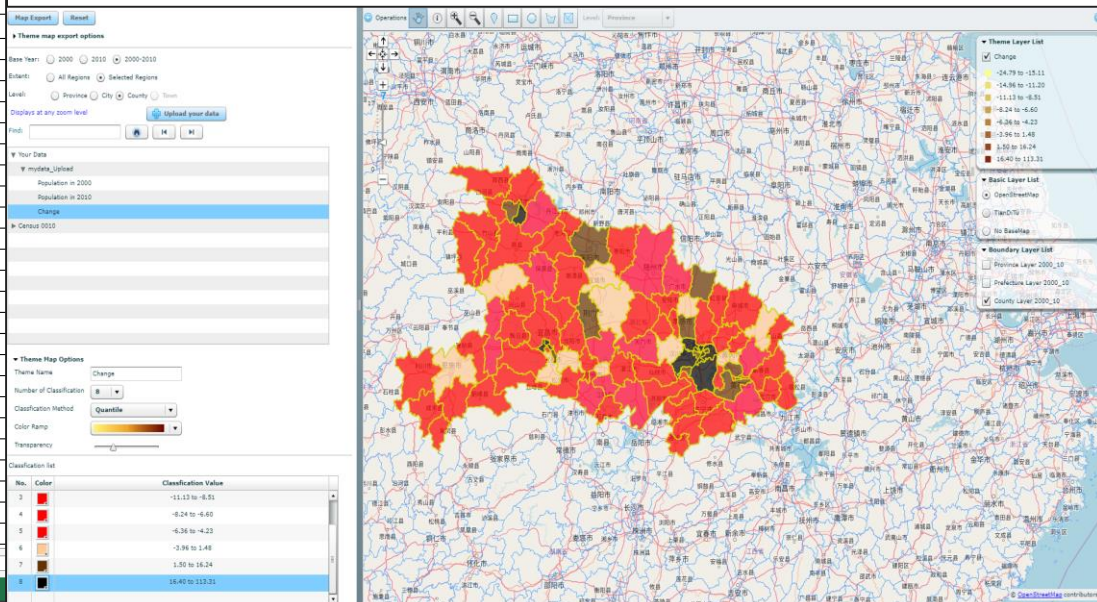


基于人口普查的2000 to 2010年人口变化数据

Data Source: <https://china-data-online.com>

A	B	C
4 Prov_EN	所在省的英文名称	English name of Province
5 GbCity	市级的四位码	Four digit code of City in number
6 City_CH	所在市的中文名称	Chinese name of City
7 City_EN	所在市的英文名称	English name of City
8 GbCounty	区县级的六位码	Six digit code of County in number
9 County_CH	所在区县的中文名称	Chinese name of County
10 County_EN	所在区县的英文名称	English name of County
11 A100008_00	2000年城镇人口数	Urban Population in 2000
12 A100008_10	2010年城镇人口数	
13 A100009_00	2000年乡村人口数	
14 A100009_10	2010年乡村人口数	
15 A101001_00	2000年总户数合计	
16 A101001_10	2010年总户数合计	
17 A101002_00	2000年属家庭户的户数	
18 A101002_10	2010年属家庭户的户数	
19 A101003_00	2000年属集体户的户数	
20 A101003_10	2010年属集体户的户数	
21 A101004_00	2000年总人口数合计	
22 A101004_10	2010年总人口数合计	
23 A101005_00	2000年男性人口数合计	
24 A101005_10	2010年男性人口数合计	
25 A101006_00	2000年女性人口数合计	
26 A101006_10	2010年女性人口数合计	
27 A103001_00	2000年户籍人口数	
28 A103001_10	2010年户籍人口数	
29 A104001_00	2000年户口登记地在外乡镇街道的总人口合计	
30 A104001_10	2010年户口登记地在外乡镇街道的总人口合计	
31 A104004_00	2000年户口登记地在本县(市、区)的人口小计	
32 A104004_10	2010年户口登记地在本县(市、区)的人口小计	
33 A104007_00	2000年户口登记地在本省其他县(市、区)的人口小计	
34 A104007_10	2010年户口登记地在本省其他县(市、区)的人口小计	
35 A104010_00	2000年户口登记地在省外的人口小计	
36 A104010_10	2010年户口登记地在省外的人口小计	
37 A105004_00	2000年农业户口人口小计	
38 A105004_10	2010年农业户口人口小计	
39 A105007_00	2000年非农业户口人口小计	
40 A105007_10	2010年非农业户口人口小计	

Population Changes by County: 2000 - 2010



中国数据在线提供的年度卫生统计数据

<http://china-data-online.com>

The screenshot shows the homepage of the China Data Online website. The browser address bar displays 'china-data-online.com'. The page header includes the logo for 'ALL CHINA DATA CENTER' and 'China Data Online 中国数据在线'. Below the header is a navigation menu with links for Home, Data Products, Database Demo, Dictionary, Support, Contact, Q&A, Citations, My Account, and Logout. The main content area is divided into three red-bordered boxes: 'CHINA SPATIAL DATA' with links to 'China Geo-Explorer II', 'China Geo-Explorer I', and 'China Map Library'; 'CHINA STATISTICS' with links to 'Monthly Statistics', 'National Statistics', 'Provincial Statistics', 'City Statistics', 'County Statistics', 'Monthly Industrial Data', 'Yearly Industrial Data', 'Statistics on Map', and 'Statistical Datasheets'; and 'CENSUS DATA' with links to 'Census Maps', 'All Census Data', 'Economic Census 2004', 'Industrial Census 1995', 'Census 1982', 'Census 1982 (10%)', 'Census 1990', 'Census 1995 (1%)', 'Province 2000', 'County 2000', 'Census 2005 (1%)', and 'Census Data Search'. At the bottom, there is a section for 'FREE CHINA MAPS' with links to '2000 Population Census', 'Pop & Env (1990-1999)', 'Pop & Env (2000)', and 'Atlas of Industrial Census'. A footer at the bottom right contains the text 'The Gross Imports and Exports in the Fourth Quarter of 2019 (1/14/2020)'.


Health Statistics

- National Statistics
- Provincial Statistics
- City Statistics
- County Statistics
- Monthly Industrial Data
- Yearly Industrial Data
- Statistical Datasheets


中国空间信息系统提供的卫生数据China Geo-Explorer

<https://china-data-online.com>


Statistics



Census



GIS



Data



All China Marketing Research

Welcome China Data Center, your IP is: 98.224.227.102, please click the links below to enter.

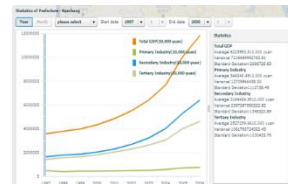
- ➔ **China Geo-Explorer II**
China Geo-Explorer (CGE) fully integrates different data sources from government statistics, population census and economics census of China at different levels (province, city, county, township and ZIP code) into a spatial system with more than 6,000 comparable variables for easy access.
[Full_Version](#) [HTML5_Beta_Version](#) [Free_Version](#) [User_Guide](#) [Citations](#)
- ➔ **US Geo-Explorer**
US Geo-Explorer (UGE) fully integrates the population census and business data of the U.S. from different years at different levels (state, metropolitan, county, CCD, place, tract and block) into a spatial system with more than 40,000 comparable variables for easy access.
[User's_Guide](#)

*Both systems are compatible with IE 8+, FireFox or Chrome. Flash player 9 or higher version is required.

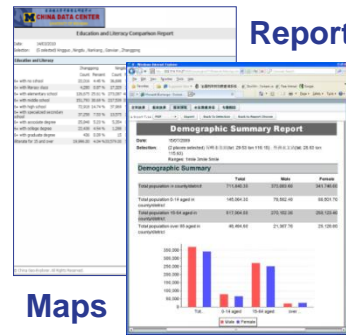
All China Market Research (ACMR)

Output

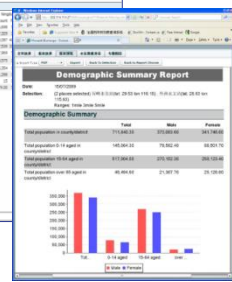
Charts



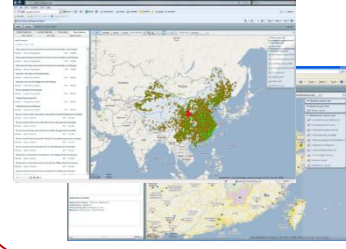
Tables



Reports



Maps



年度卫生统计 Yearly Health Statistics

Data Source: <https://china-data-online.com>

NUMBER OF HEALTH INSTITUTIONS											
Year	Total (unit)	Hospitals (unit)	At and Above County Level (unit)	Sanatoriums (unit)	Clinics (unit)	Prevention & Treatment Centers & Stations (unit)	Sanatorium and Antiepidemic Institutions (unit)	Maternity and Child Care Centers (unit)	Chemical Reagent Test Labs (unit)	Institutes of Medical Science (unit)	Other Institutions (unit)
1949	3,670	2,600	2,600	30	769	11		9	1	3	247
1950	8,915	2,880	2,880	60	3,356	30	61	426	2	3	2,174
1951	16,181	3,150	3,150	120	8,934						
1952	38,987	3,540	3,540	270	29,050						
1953	52,038	3,580	3,580	520	38,987						
1954	56,610	3,658	3,658	678	42,840						
1955	67,725	3,740	3,740	822	51,600						
1956	107,305	3,903	3,903	799	86,866						
1957	122,954	4,179	4,179	835	102,262						
1958	196,829	4,949	4,949	695	132,894						
1959	231,958	5,730	5,730	910	186,039						
1960	261,195	6,180	6,180	1,577	213,823						
1961	269,197	6,498	6,498	1,361	217,568						
1962	217,985	5,300	5,300	1,266	172,708						
1963	215,491	5,242	5,242	1,116	170,717						
1964	215,474	5,355	5,355	1,027	167,715						
1965	224,266	5,445	5,445	887	170,430						
1966	206,613	5,588	5,588	818	153,730						
1967	196,455	5,713	5,713	734	134,725						
1968	171,494	5,837	5,837	473	108,090						
1969	153,891	5,839	5,839	359	90,744						
1970	149,823	6,030	6,030	359	79,600						
1971	131,367	6,660	6,660	183	62,457						
1972	135,127	6,974	6,974	183	66,067						
1973	143,733	7,361	7,361	238	72,117						
1974	149,965	7,570	7,570	252	76,988						
1975	151,733	7,757	7,757	297	80,739						
1976	157,959	7,952	7,952	317	85,616						
1977	164,199	8,550	8,550	342	90,285						
1978	169,732	8,841	8,841	389	94,395						
1979	176,793	9,254	9,254	440	99,643						
1980	180,553	9,478	9,478	470	102,474						

HOSPITAL BEDS AND MEDICAL TECHNICAL PERSONNEL BY CITY AND COUNTY													
Year	Beds		City (10000 persons)	AREAS				County (10000 persons)	Persons				
	City (10000 units)	County (10000 units)		Doctors		Senior and Junior Nurses			County (10000 persons)	Doctors		Senior and Junior Nurses	
				City (10000 persons)	County (10000 persons)	City (10000 persons)	County (10000 persons)			City (10000 persons)	County (10000 persons)		
1949	6	2	17.7				32.8						
1952	12.1	3.9	22.5	8.1		4.3	46.5			34.3		1.8	
1957	22.1	7.4	38.2	13.8		10	65.7			40.8		2.8	
1962	43.7	25.3	57.1	21.4		15.5	84.3			47.4		4.5	
1965	45.8	30.8	65.2	26.9		17.6	88			49.4		5.9	
1970	51.1	59.5	59.6	24.1		18	85.7			46.1		11.6	
1975	63.7	96.1	95.7	36.7		24	110			51		14	
1978	71.6	114	114.2	44.2		25.7	132.1			59.1		14.9	
1980	90.33	128.11	131.3	52.7		30	148.5			62.6		16.6	
1981			143.5	58.6		33.4	157.6			65.8		19.1	
1982			150.9	62.8		35.4	163.4			67.9		21	
1983	86.9	124.1	157.4	66.5		37.3	167.9			68.7		22.3	
1984			164.2	69.4		39.3	170.2			68.8		22.3	
1985	96.21	126.71	167.7	70.9		39.2	173.4			70.4		24.5	
1986	103.3	126.4	177.4	74.9		42.9	173.3			69.5		25.2	
1987	112.7	127.7	188.2	79.3		46.1	172.6			68.9		25.7	
1988	125.5	124.8	202.8	88.6		53.7	169.6			73.2		29.2	
1989	133.5	123.3	212.1	95		59.9	168.8			76.8		32.2	
1990	138.67	123.74	218.5	97.8		63.4	171.3			78.5		34.1	
1991	144.8	124	226.4	100.3		66.6	172.1			77.7		34.6	
1992	152.4	122	236.3	104.3		69.5	171.1			76.5		34.5	
1993	159.6	119.9	243.3	107.7		71.5	168.5			75.5		34.1	
1994	170.7	112.4	258.9	115		76.2	161			73.2		33.2	
1995	173.96	109.65	265.9	118.4		79	159.8			73.4		33.5	

年度统计报表 Yearly Statistical Datasheets

Data Source: <https://china-data-online.com>

Welcome UM Asia Library , your IP is: 141.213.168.252 Today is: 2016-11-20 EST USA

ALL CHINA DATA CENTER China Data Online 中国数据在线

Home | CDC | Database Demo | Offline Products | Dictionary | Support | Contact | Online Question And Answer | My Account | Logout

Region: CHINA BEIJING TIANJIN HEBEI SHANXI INNER MONGOLIA LIAONING JILIN HEILONGJIANG SHANGHAI JIANGSU ZHEJIANG ANHUI FUJIAN JIANGXI SHANDONG HENAN HUBEI HUNAN GUANGDONG GUANGXI HAINAN CHONGQING SICHUAN GUIZHOU YUNNAN TIBET SHAANXI GANSU

Year: 2014 To 2015 hospital Search In Results Search Chines

Datasheet Name	Region	Subject	Year
Hospital Patients (2013)	HEBEI	PUBLIC HEALTH AND SOCIAL ...	2014
Operation of Hospitals, Health Care Centers	TIANJIN	PUBLIC HEALTH AND SOCIAL ...	2014
20-4 BASIC STATISTICS ON HOSPITALS (2013)	BEIJING	PUBLIC HEALTH AND SOCIAL ...	2014
20-5 WORKS OF HOSPITALS (2013)	BEIJING	PUBLIC HEALTH AND SOCIAL ...	2014
18-8 Medical Services of Hospitals in Selected Years	FUJIAN	PUBLIC HEALTH AND SOCIAL ...	2014
18-9 Medical Services of Hospitals, Institutes of Health and Health...	FUJIAN	PUBLIC HEALTH AND SOCIAL ...	2014
Number of Hospital Patients & Admissions (2013)	GUANGXI	PUBLIC HEALTH AND SOCIAL ...	2014
Basic Statistics on Hospitals and Health Centers at County Level ...	GUIZHOU	PUBLIC HEALTH AND SOCIAL ...	2014
Services in Hospitals by Region	GUIZHOU	MAIN INDICATORS OF CITIES...	2014
Percentage of 10 Main Diseases of Inpatients in City Hospitals of ...	HENAN	PUBLIC HEALTH AND SOCIAL ...	2014
Hospital Beds and Medical Technical Personnel by City and County ...	XINJIANG	PUBLIC HEALTH AND SOCIAL ...	2014
Hospital Beds and Medical Technical Personnel by City and County ...	XINJIANG	PUBLIC HEALTH AND SOCIAL ...	2014
The per capita medical expenses of patients hospitalized in the m...	XINJIANG	PUBLIC HEALTH AND SOCIAL ...	2014
The per capita medical expenses of patients hospitalized in the m...	XINJIANG	PUBLIC HEALTH AND SOCIAL ...	2014
Number of Doctors and Hospital Beds Per 10 000 Population by Pref...	XINJIANG	MAIN INDICATORS OF CITIES...	2014
Statistics on Visits and Inpatients in Hospitals, Health Stations...	CHONGQING	PUBLIC HEALTH AND SOCIAL ...	2014
20-9 Number of Hospital Patients (2013)	ANHUI	PUBLIC HEALTH AND SOCIAL ...	2014
20-11 Utilization of Hospital Beds at and Above County Level (201...	ANHUI	PUBLIC HEALTH AND SOCIAL ...	2014
20-12 Hospital Beds Usage in Main Year	ANHUI	PUBLIC HEALTH AND SOCIAL ...	2014
20-13 Hospital Beds Usage by Region (2013)	ANHUI	PUBLIC HEALTH AND SOCIAL ...	2014
20-14 Hospital Beds Usage of Beds of Township Hospitals in Main Y...	ANHUI	PUBLIC HEALTH AND SOCIAL ...	2014
20-15 Hospital Beds Usage of Beds of Township Hospitals by Region...	ANHUI	PUBLIC HEALTH AND SOCIAL ...	2014
Situation of Outpatient and Hospitalization Services of Health Ins...	GANSU	PUBLIC HEALTH AND SOCIAL ...	2014
Basic Statistics of Hospitals and Health Centers (2013)	GANSU	PUBLIC HEALTH AND SOCIAL ...	2014
Out-patient Clinics in Hospitals in Medical Institutions(2013)	JIANGXI	PUBLIC HEALTH AND SOCIAL ...	2014

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医疗设备制造 Manufacture of Medical Machinery

Data Source: <https://china-data-online.com>

医疗诊断、监护及治疗设备制造	Medical diagnosis, care and treatment equipment manufacturing
口腔科用设备及器具制造	Dental equipment and apparatus used manufacturing
实验室及医用消毒设备和器具的制	Laboratory and medical equipment and apparatus disinfection system
医疗、外科及兽医用器械制造	Medical, surgical and veterinary equipment manufacturing
机械治疗及病房护理设备制造	Treatment and Nursing mechanical equipment manufacturing
假肢、人工器官及植（介）入器械	artificial organs and plantations (referred) to enter Devices
其他医疗设备及器械制造	Other medical equipment and device manufacturing

	Baoshan	Changning	Changshu	Chongming	Fengxian	Hongkou	Huangpu	Jiading	Jingan	Kunshan	Luwan	Minxing	Nanhui
2008 Daily and medical rubber products manufacturing	4	2	5	0	3	2	0	14	0	4	0	4	4
2008 Medical diagnosis, care and treatment equipment manufacturing	8	0	2	4	9	5	0	12	2	4	2	8	10
2008 Dental equipment and apparatus used manufacturing	1	0	1	2	3	1	0	1	0	2	0	4	4
2008 Laboratory and medical equipment and apparatus disinfection system	6	1	1	1	3	1	0	2	0	2	0	3	2
2008 Medical, surgical and veterinary equipment manufacturing	10	2	6	0	6	3	2	13	0	8	0	8	12
2008 Treatment and Nursing mechanical equipment manufacturing	0	2	0	0	3	2	0	1	0	1	0	3	1
2008 artificial organs and plantations (referred) to enter Devices	3	5	1	0	2	4	0	0	7	0	1	8	2
2008 Other medical equipment and device manufacturing	11	1	9	5	11	4	0	14	0	6	1	16	7

医药制造Manufacture of Medicines

Data Source: <https://china-data-online.com>

化学药品原药制造	The original drug manufacturing chemicals
化学药品制剂制造	Chemical agent production
中药饮片加工	Pieces of Traditional Chinese medicine processing
中成药制造	Traditional Chinese Prepared Medicines
兽用药品制造	Veterinary medicine manufacturing
生物、生化制品的制造	Biological, chemical and biological products manufacturing
卫生材料及医药用品制造	Sanitation Materials and Medical Articles

	Baoshan	Changning	Changshu	Chongming	Fengxian	Hongkou	Huangpu	Jiading	Jingan	Kunshan
2008 The original drug manufacturing chemicals	5	0	12	0	5	1	1	13	0	20
2008 Chemical agent production	5	2	2	1	11	0	0	14	0	9
2008 Pieces of Traditional Chinese medicine processing	1	0	0	1	1	1	1	4	0	0
2008 Traditional Chinese Prepared Medicines	2	0	2	2	3	0	1	5	1	0
2008 Veterinary medicine manufacturing	4	0	1	0	3	0	0	4	0	0
2008 Biological, chemical and biological products manufacturing	9	1	2	0	17	1	1	3	0	9
2008 Sanitation Materials and Medical Articles	15	2	6	4	12	0	0	5	1	13

卫生服务Health Care

Data Source: <https://china-data-online.com>

综合医院
中医医院
中西医结合医院
民族医院
专科医院
疗养院
卫生院及社区医疗活动
门诊部医疗活动
计划生育技术服务活动
妇幼保健活动
专科疾病防治活动
疾病预防控制及防疫活动
其他卫生活动
社会保障业
干部休养所
收养收容服务
不提供住宿的社会福利

General Hospital
Traditional Chinese medicine hospital
Combined Traditional Chinese and Western Medicine Hospital
National Minority Hospital
Specialist Hospital
Nursing Homes
Health Centers and Community Medical Treatment Activities
Clinics Medical Treatment Activities
Family planning service
Maternal and child health service
Specialist service for Disease Control and Prevention
Vaccination for disease prevention and control service
Other health services
Social Security
Cadres sanatorium
Adoption of asylum services
No Lodging Social Welfare

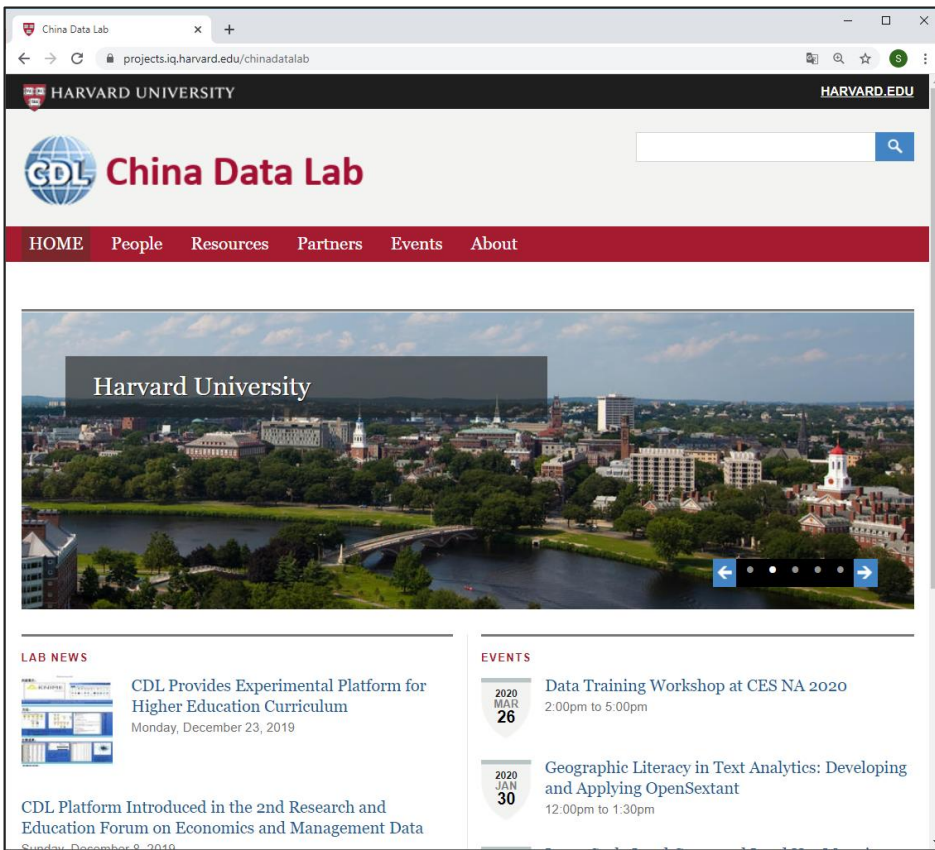
	Baoshan	Changning	Changshu
Date:	14/10/2016		
Selection:	(24 selected) Baoshan, Changning, Changshu, Chongming, Fengxian, Hongkou, Huangpu, Jiading		
2008 General Hospital	14	12	8
2008 Traditional Chinese medicine hospital	1	2	1
2008 Combined Traditional Chinese and Western Medicine Hospital	0	1	0
2008 National Minority Hospital	0	0	0
2008 Specialist Hospital	5	17	11
2008 Nursing Homes	2	5	1
2008 Health Centers and Community Medical Treatment Activities	18	7	27
2008 Clinics Medical Treatment Activities	22	31	22
2008 Family planning service	2	3	8
2008 Maternal and child health service	2	2	1
2008 Specialist service for Disease Control and Prevention	3	3	0
2008 Vaccination for disease prevention and control service	1	6	4
2008 Other health services	6	5	10

预期产品: The List of Some Data Products From this Project

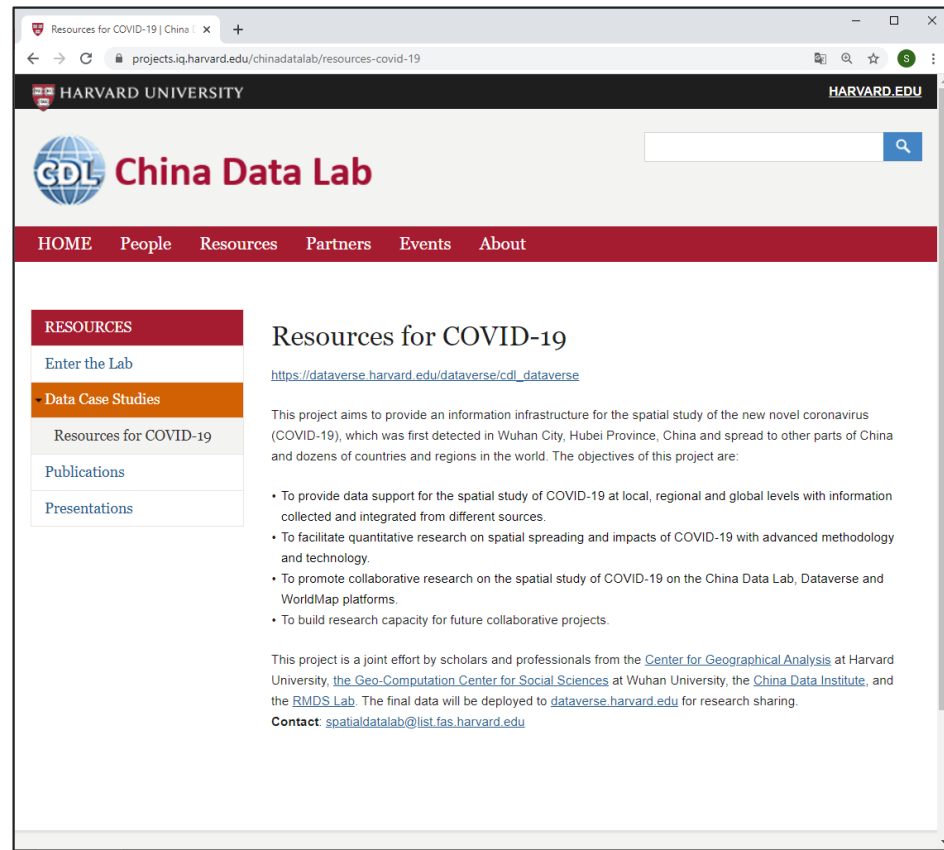
- Daily reports on virus by city
- Daily reports on virus by province
- Daily reports on virus by country
- City GIS Maps with Daily Virus Data
- Province GIS Maps with Daily Virus Data
- Country GIS maps with daily virus data
- Workflow data analysis with virus data
- Workflow data analysis with social media data
- Matrix tables with daily city to city floating population
- Matrix tables with daily province to province floating population
- County GIS maps with hospital data of China
- City GIS maps with hospital data of China
- Province GIS maps with hospital data of China
- Policies, regulations and changes in leadership

数据发布 (1) : 资源中心COVID-19

<http://chinadatalab.net>



The screenshot shows the main page of the China Data Lab website. At the top, there is a navigation bar with the Harvard University logo and the text 'HARVARD UNIVERSITY' and 'HARVARD.EDU'. Below this is the 'CDL China Data Lab' logo and a search bar. A red navigation bar contains the following links: HOME, People, Resources, Partners, Events, About. The main content area features a large image of Harvard University with the text 'Harvard University' overlaid. Below the image is a 'LAB NEWS' section with two articles: 'CDL Provides Experimental Platform for Higher Education Curriculum' (Monday, December 23, 2019) and 'CDL Platform Introduced in the 2nd Research and Education Forum on Economics and Management Data' (Sunday, December 8, 2019). To the right of the news is an 'EVENTS' section with two upcoming events: 'Data Training Workshop at CES NA 2020' (2:00pm to 5:00pm, 2020 MAR 26) and 'Geographic Literacy in Text Analytics: Developing and Applying OpenSextant' (12:00pm to 1:30pm, 2020 JAN 30).



The screenshot shows the 'Resources for COVID-19' page on the China Data Lab website. The navigation bar is identical to the homepage. The main content area has a red navigation bar with the following links: HOME, People, Resources, Partners, Events, About. Below this is a 'RESOURCES' section with a red header and four sub-sections: 'Enter the Lab', 'Data Case Studies', 'Resources for COVID-19', 'Publications', and 'Presentations'. The 'Resources for COVID-19' sub-section is highlighted in orange. The main content area features a large heading 'Resources for COVID-19' and a sub-heading 'Enter the Lab' with a link to https://dataverse.harvard.edu/dataverse/cdl_dataverse. Below this is a paragraph describing the project's aim to provide an information infrastructure for the spatial study of COVID-19. A list of bullet points follows, detailing the project's goals: to provide data support, facilitate quantitative research, promote collaborative research, and build research capacity. At the bottom, there is a paragraph describing the project as a joint effort by scholars and professionals from the Center for Geographical Analysis, the Geo-Computation Center for Social Sciences, the China Data Institute, and the RMDS Lab. The final data will be deployed to dataverse.harvard.edu for research sharing. The contact information is spatialdatalab@list.fas.harvard.edu.

数据发布（2）：数据下载dataverse.harvard.edu

<http://chinadatalab.net>



Open source research data repository software



Researchers

Enjoy full control over your data. Receive *web visibility*, *academic credit*, and *increased citation counts*. A personal dataverse is easy to set up, allows you to display your data on your personal website, can be branded uniquely as your research program, makes your data more discoverable to the research community, and satisfies data management plans. *Want to set up your personal dataverse?*



Journals

Seamlessly manage the submission, review, and publication of data associated with published articles. Establish an *unbreakable link* between *articles in your journal* and *associated data*. Participate in the open data movement by using Dataverse as part of your journal data policy or list of repository recommendations. *Want to find out more about journal dataverses?*



Institutions

Establish a research data management solution for your community. Federate with a growing list of Dataverse repositories worldwide for increased discoverability of your community's data. Participate in the drive to set norms for sharing, preserving, citing, exploring, and analyzing research data. *Want to install a Dataverse repository?*



Developers

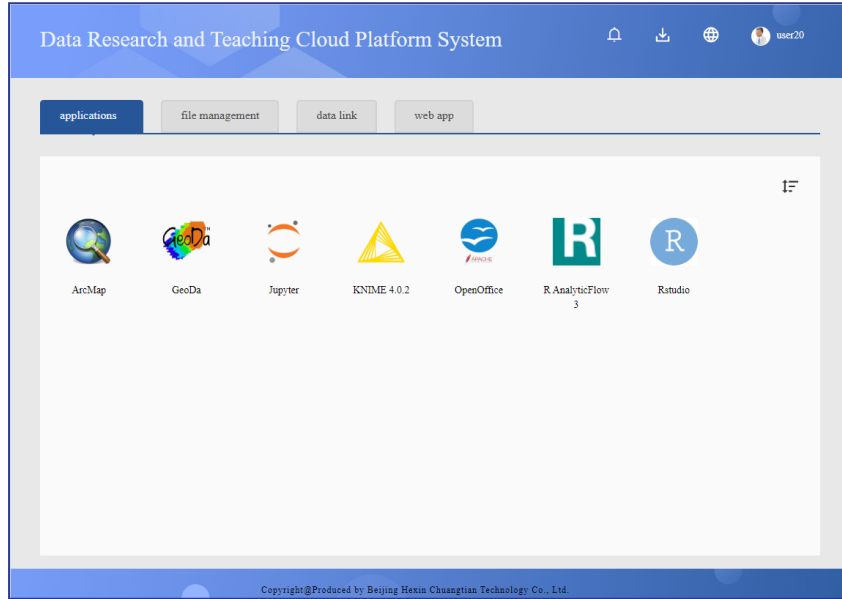
Participate in a vibrant and growing community that is helping to drive the norms for sharing, preserving, citing, exploring, and analyzing research data. Contribute code extensions, documentation, testing, and/or standards. *Integrate research analysis, visualization and exploration tools*, or other research and data archival systems with Dataverse. *Want to contribute?*

A screenshot of the Dataverse website interface. The browser address bar shows "dataverse.harvard.edu/dataverse/2019ncov". The page title is "Resources for COVID-19 (China Data Lab)". Below the title are navigation links for "Data", "Development Code", "News Report", and "Research Papers". A search bar is present with the text "Search this dataverse...". The main content area displays a list of 6 dataverses, including "Data (China Data Lab)", "Research Papers (China Data Lab)", "Workflows (China Data Lab)", "Web Sites (China Data Lab)", and "News Report (China Data Lab)". Each entry includes a small Dataverse icon and a date (2020-2-11). A "Feedback" button is visible at the bottom right.

数据发布（3）：可执行 workflows 云平台 CDL Cloud

<http://chinadatalab.net>

CDL in Harvard



<http://harvard.chinadatalab.org>

CDL in China

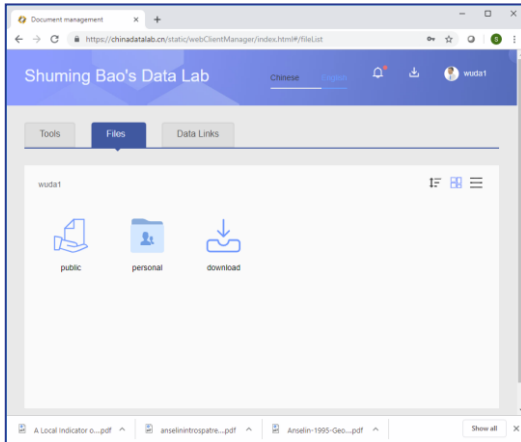


<http://chinadatalab.org>

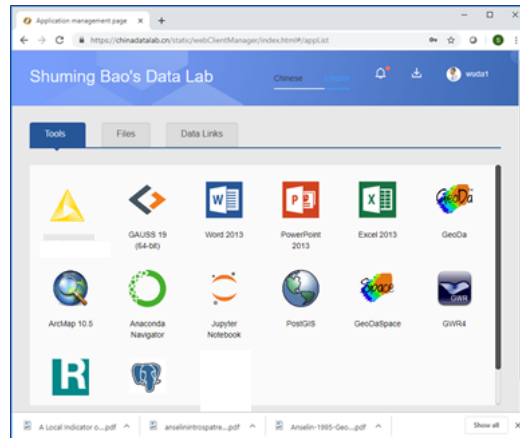
云平台主要特性CDL Cloud Platform Features

- ❑ 云端数据 Data available only on the cloud (users can upload own data)
- ❑ 云端工具 Tools available on the cloud
- ❑ 云端计算 All computation are on the cloud (results can be downloadable)
- ❑ 云端维护 No maintenance required for end users

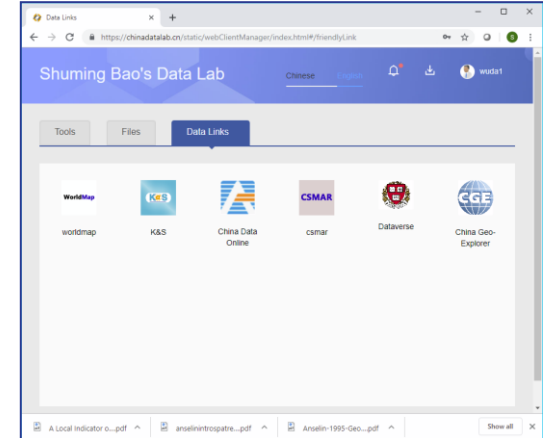
Personal & Shared Data



Tools



External Data Links



云平台主要工具 Tools on CDL Cloud

Office tools



Word 2013



PowerPoint 2013



Excel 2013



Photoshop



Notepad++

Interactive tools



GWR4



GeoDa



ArcMap 10.5



ENVI 5.3 + IDL 8.5



grass

Programming tools



Rstudio



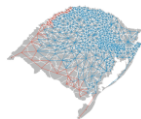
Anaconda Navigator



GAUSS 19

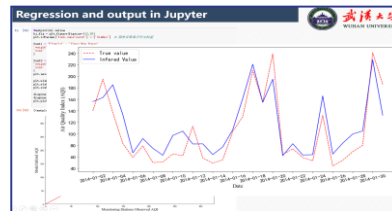
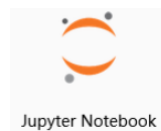
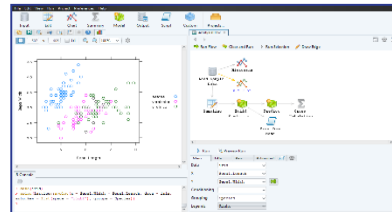
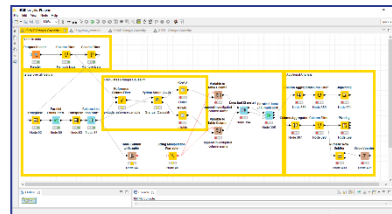


Spyder



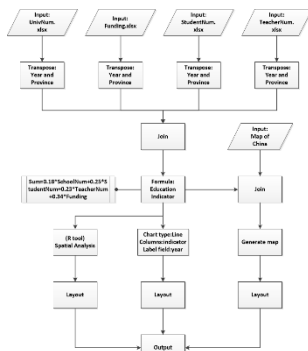
PySAL

Workflow tools

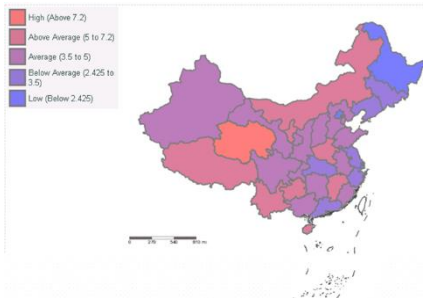


美国自然科学基金会：可复制、可重复、可扩展研究

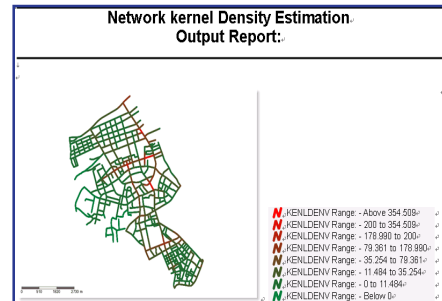
Reproducible, Replicable, Generalizable Research



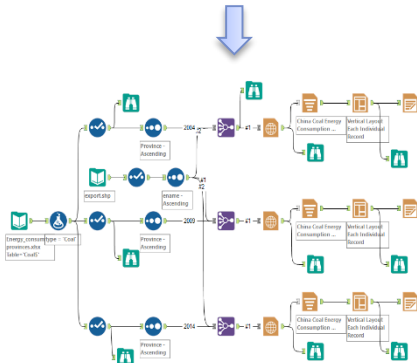
Environment



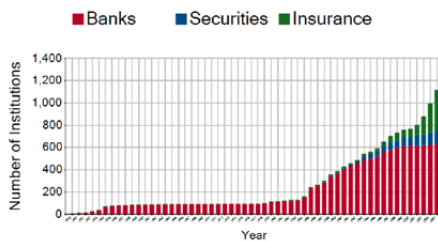
Education



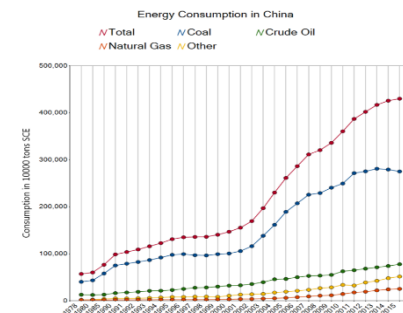
Transportation



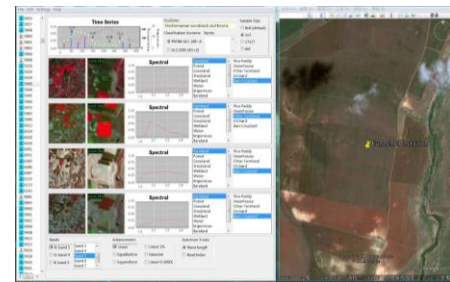
Total Numbers of Financial Institutions in Guangdong (1949 - 2004)



Economics



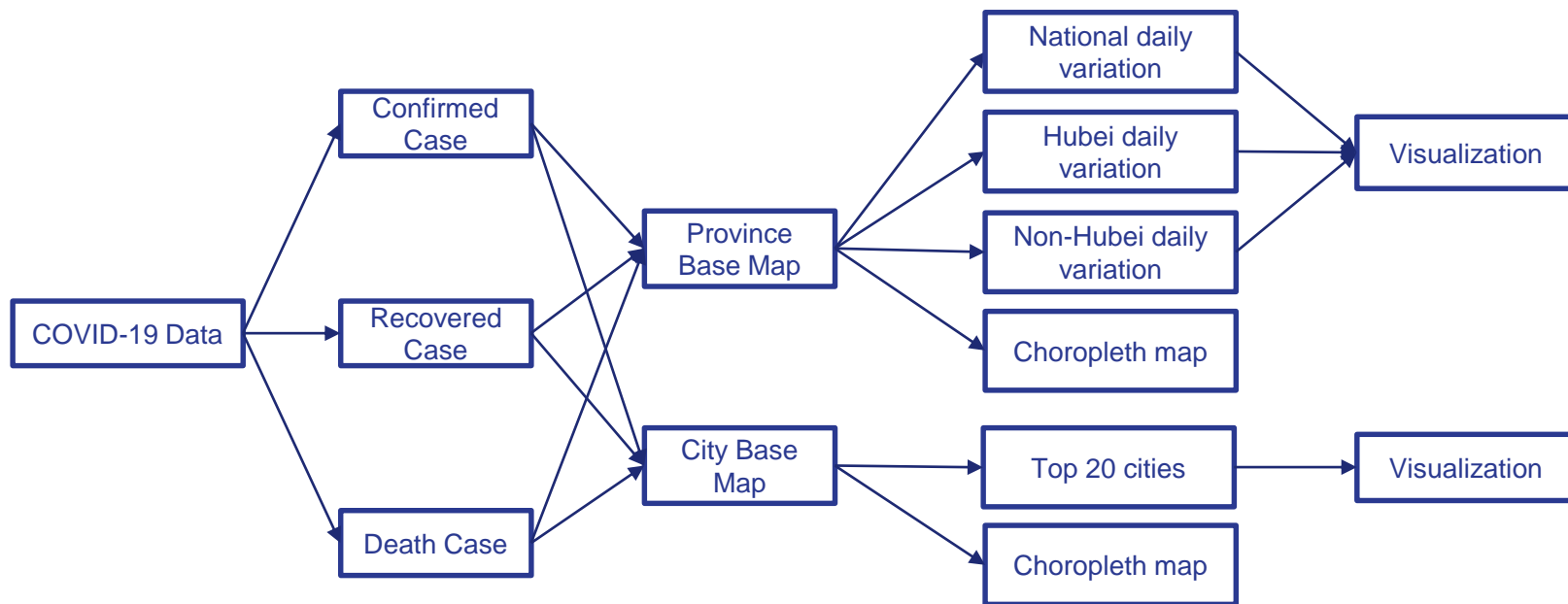
Energy



Land Use

疫情数据集成、分析与可视化流程框图

Flowcharts for the Integration, Analysis and Visualization of Virus Data



基于工作流的数据处理与分析

Tool source: <https://www.knime.com/>

The screenshot displays the KNIME Analytics Platform interface with a workflow titled "Cast int to long" and a sub-workflow "CES annual report test".

Workflow Components:

- Input:** Excel Reader (XLS) feeds into a Groupby node (group by province).
- Processing:**
 - Groupby node connects to three Row Filter nodes (nation, hubei, hubei).
 - The first Row Filter (nation) connects to a Concatenate node (Node 5).
 - The second Row Filter (hubei) connects to a Constant Value Column node (add non hubei id/group by province).
 - The third Row Filter (hubei) connects to a Groupby node.
 - The Constant Value Column node connects to a Groupby node.
 - The Concatenate node and the second Groupby node connect to a Joiner node (combination).
 - The Joiner node connects to a Rule Engine Color Manager node (category).
 - The Rule Engine Color Manager node connects to an OSM Map to Image node.
 - The OSM Map to Image node connects to an OSM Viewer node.
- Output:** The OSM Viewer node connects to an Image Writer (Port) node (Export map).

Visualization:

- A Line Plot node (Node 22) displays "Daily statistics of nation, Hubei province and non-Hubei province".
- A Shapely Polygon Reader node (Province Map) feeds into a Column Filter node (Changtiansh-map visualization in province level).
- The Column Filter node connects to a Joiner node (combination).
- The Joiner node connects to a Rule Engine Color Manager node (category).
- The Rule Engine Color Manager node connects to an OSM Map to Image node.
- The OSM Map to Image node connects to an OSM Viewer node.
- The OSM Viewer node connects to an Image Writer (Port) node (Export map).

Interface Elements:

- KNIME Explorer:** LOCAL (Local Workspace) tree showing "Cast int to long" and "CES annual report test".
- Workflow Coach:** Node recommendations only available with usage data.
- Node Repository:** Searchable list of nodes (IO, Manipulation, Views, Analytics, DB, etc.).
- Outline:** Overview of the workflow structure.
- Visualizations:** NKF Directorate bar chart, network graph, and map visualization.
- Description Panel:** Details for "CES annual rep..." including Title, Description, Tags, Links, Creation Date (2019-11-28), and Author (sbao).

基于R AnalyticFlow的疫情拟合与预测 workflow

Tool source: <https://r.analyticflow.com/en>

R AnalyticFlow

The screenshot displays the R AnalyticFlow interface with a workflow for COVID-19 case fitting and prediction. The main window shows a plot of 'Cases' vs 'Days from From nCoV-2019 Case First Reported' with three fitted curves and their respective equations:

- Blue dashed line: $y = -106.714x + 43594$, $R^2 = 0.943$
- Green dashed line: $y = 21.999x^{1.181}$, $R^2 = 0.927$
- Black dashed line: $y = -0.132x^3 + 4.828x^2 + -1.224x + -27.446$, $R^2 = 0.91$

The R Console shows the following code:

```
> lines(x2, y2, lty = 2, col = "black", lwd = 2)
> lines(x2, y6, lty = 2, col = "green", lwd = 2)
> points(x1$ID, x1$value.pch=0, cex=2, col="black")
> text(35.1, labels = equation3.pos=1, adj=0, offset=0, cex=1.2)
> text(35.1, labels = equation2.pos=1, adj=0, offset=-2, cex=1.2)
> text(35.1, labels = equation1.pos=1, adj=0, offset=-4, cex=1.2)
> title(paste(Rname1, "Jan", day2, sep=""))
```

The workflow diagram on the right shows the process: 程序包 (Package) → 数据导入 (Data Import) → 选择城市 (Select City) → 数据整理 (Data Cleaning) → 简单制图 (Simple Plotting) → Function → plot → prediction → Rname.result2 → Rsquare.

Below the workflow, there are four sub-plots showing case counts for different cities:

- 荆门 Jingmeng Jan2 2
- 荆州 Jingzhou Jan2 2
- 潜江 Qianjiang Jan2 5
- 十堰 Shiyan Jan2 3

Each sub-plot shows '病例数量' (Case Count) vs 'Days From nCoV-2019 Case First Reported' with a vertical dashed line indicating the date 'Feb 2nd'.

从DataVerse数据平台调用执行 workflows

Tool source: <https://www.knime.com/>



Workflows for download on dataverse.harvard.edu

HARVARD Dataverse

Harvard Dataverse > China Data Lab Dataverse > Resources for COVID-19 > Workflows > COVID19 Stats Analysis

COVID19 Stats Analysis

Tao Hu, 2020, "COVID19 Stats Analysis", <https://doi.org/10.7910/DVNI/FWOPW2>, Harvard Dataverse, DRAFT VERSION

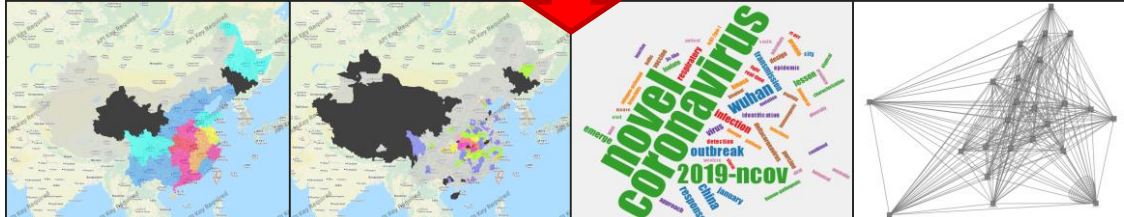
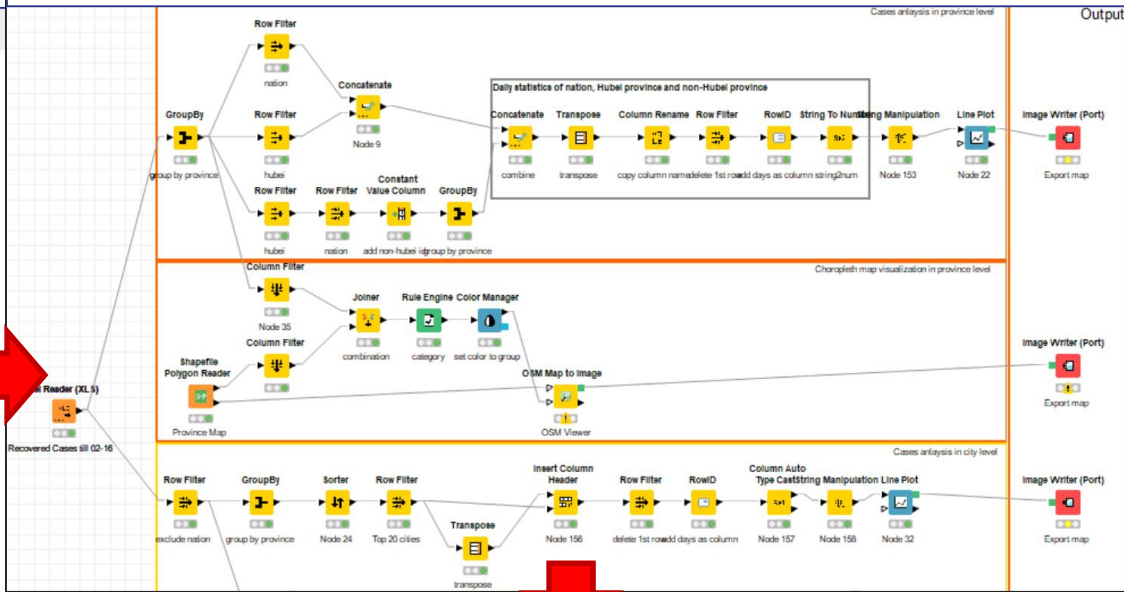
Description This dataset saves workflows related to the COVID-19 statistics analysis. (2020-02-20)

Subject Medicine, Health and Life Sciences; Computer and Information Science; Social Sciences

Keyword workflow, statistics, map

File Name	Size	Created	Downloads
covid19_stats_confirmed.knwf	Unknown - 98.8 KB	- 2020-2-20 - 0	0 Downloads
covid19_stats_death.knwf	Unknown - 99.7 KB	- 2020-2-20 - 0	0 Downloads
covid19_stats_recovered.knwf	Unknown - 98.2 KB	- 2020-2-20 - 0	0 Downloads

Executable workflows on harvard.chinadatalab.org



“The Resources for Novel Coronavirus and Global Research” “新冠病毒资源与全球研究”项目

中国数据研究所联合哈佛大学、芝加哥大学、武汉大学等知名高校学者以及百智享、和信创天、华通人等知名企业共同开展新型肺炎疫情研究，实现产学研合作，协同在线研究。

❑ Resource support 数据支持

- Data
- Tools
- Cloud computation

❑ Training 培训

- Data
- Technology
- Methodology
- Applications

❑ Distribution 发布

- Research data
- Papers and reports
- Workflows

❑ Workshop and symposium 讲座与研讨会



“The Resources for Novel Coronavirus and Global Research” “新冠病毒数据资源与全球研究” 项目申请

申请书下载: <http://chinadatalab.net> or
<https://projects.iq.harvard.edu/chinadatalab/resources-covid-19>

研究议题（建议但不限于）：

- 基于大数据的疫情监测、预警与风险评估
- 新冠病毒疫情传播扩散时空变化模式研究
- 新冠病毒疫情对中国与全球贸易与投资影响研究
- 新冠病毒疫情对地区与全球产业供应链影响研究
- 新冠病毒疫情中舆情变化与公众行为规律研究
- 新冠病毒疫情的时空动态与季节气候环境关系研究

联系地址: office@chinadatacenter.net

申请提交截止日期: **2020年3月15日**

说明: 国际合作项目优先考虑。

Objectives 项目目标

- ❑ 培育先期研究 To develop some pilot studies on COVID-19 for future research
- ❑ 专业数据分析 To cultivate professional data analysis
- ❑ 新方法与技术探索 To explore new methodology and technology for COVID-19 data analysis
- ❑ 鼓励可复制、可重复、可扩展研究 To encourage replicable, reproducible and expandable research
- ❑ 鼓励知识与信息共享 To promote knowledge and information sharing
- ❑ 促进国际合作 To promote international research collaborations
- ❑ 促进教研数据应用 To promote data applications in research and education
- ❑ 团队能力建设 To build the capacity for future collaborations

项目流程 Project Workflows: Commitments and Support

Commitments by Project Participants:

Join webinar:
Guide for
Applications

Application
Submission

Data collection
& processing

Data
analysis

Research
data

Research
reports

Workflows

Future Plans

Data
depository

Publications

Grant
proposals

Conference
presentations

Offer training
webinars

Support by China Data Lab

Offer webinars:
Guide for
Applications

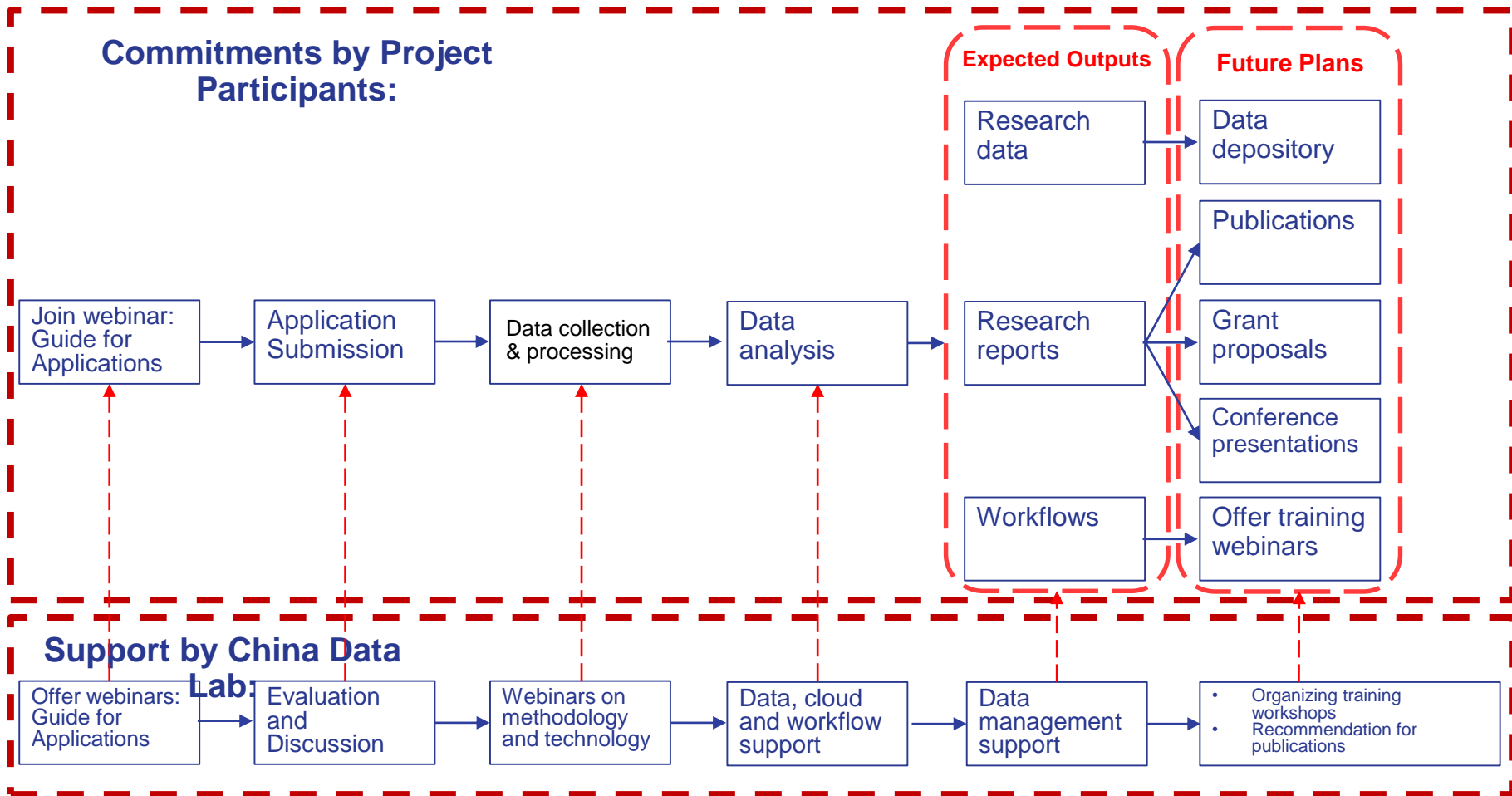
Evaluation
and
Discussion

Webinars on
methodology
and technology

Data, cloud
and workflow
support

Data
management
support

- Organizing training workshops
- Recommendation for publications



Qs & As 问题与回答

Q: Where we can find the data for the project?

A: Most aggregated data can be found from dataVerse at Harvard for public access. Some microdata and basic data will be located on the cloud with restricted access.

Q: Where will be the data depository for the final research data and reports?

A: We'll use dataVerse at Harvard primarily for data depository, which is free and have a connection with the online map viewer (WorldMap) and our cloud platform.

Q: What are the criteria for evaluating our applications?

All applications will be reviewed by the review committee with some leading scholars and professionals from Harvard, Wuhan Uni, Peking Uni, RMDS and China Data Institute. For those pilot projects, we hope that this project will help those participants to shape and build their research ideas from the project for other grant applications, and also learn new methodology and technology for future development. Thus, we'll pay more attention on the applicants' learning ability, active participation, and desire to collaborate with others.

Q: What support can those participants receive?

A: Each participants will receive a package of various support during the whole process, including webinars for project application, training webinars for data, methodology and technology, research data we can offer, cloud platform account, depository support for research data and reports, opportunity for offering training workshops, and recommendations for publications.

The Cloud Platform for Global Research on Novel Coronavirus

Global Research on Novel Coronavirus

新冠病毒数据资源与全球研究实验云平台

A white login form is centered on the page. It features a small globe icon in the top right corner. The form contains two input fields: the first is for an account name with a person icon on the left and the placeholder text 'Please enter an account name'; the second is for a password with a lock icon on the left, the placeholder text 'Please enter your password', and a small eye icon on the right to toggle visibility. Below the password field is a checkbox labeled 'Remember password'. At the bottom of the form is a prominent blue button with the text 'login' in white.

Participants 项目支持单位



Geocomputation Center for Social Sciences, Wuhan University
武汉大学社会地理计算中心



Center for Geographical Analysis, Harvard University
哈佛大学空间分析中心



RMDS Lab 研究方法与数据科学实验室



China Data Institute 中国数据研究所



MicroSoft China 微软中国



Vesystem Inc.和信创天科技有限公司



Knowledge Sharing Inc.百智享科技有限公司



All China Marketing Research Inc. 华通人市场研究有限公司

如何参与How Can You Be Involved?

- 贡献数据 **Make contributions to data collections**
- 参与研究 **Join research teams**
- 分享成果 **Share your research results**
- 参与培训 **Offer training webinars**
- 参加讲座 **Participate in workshops**
- 其他建议 **Other suggestions?**

For more information, contact: office@chinadatacenter.net

网站与联系方式Websites and Contacts

中国数据实验室China Data Lab

<http://chinadatalab.net>

or

<https://projects.iq.harvard.edu/chinadatalab>

中国数据在线China Data Online

<http://china-data-online.com>

联系方式Contacts

SpatialDataLab@list.fas.harvard.edu

office@chinadatacenter.net

哈佛大学空间卫生会议预告

Upcoming Conference on Spatial Health at Harvard

2020 CGA CONFERENCE:

From Geospatial Research to Health Solutions

Date: Apr 30th - May 1st, 2020

Location: 1730 Cambridge Street, Concourse Level,
Cambridge, MA 02138

This event is free and open to the public.

Speakers are by invitation only.

Posters and participants are welcome.

To register: <https://gis.harvard.edu/event/2020-cga-conference-spatial-health-tentative>

